

APPENDIX H

Oral History Interview with Brigadier General Susan J. Helms, 45th Space Wing Commander, by Mark C. Cleary, 45th Space Wing Historian (14 May 2007)

C: To begin, General Helms, would you like to comment on your most important command decisions during Calendar Year 2006?

H: Mark, I've had a chance to think about them, and I have taken the time to write them down. There were three very important decisions I had to make as Wing Commander in 2006. The first one was the decision to proceed with bringing a commercial launch company onto Cape Canaveral property. In 2006 we began the process of allocating a launch pad and entering into a licensing agreement with Space X. That decision gives us a new category of business and helps redefine who we are and how we support our launch customers. For the commercial launch industry, it allows them a level of access to the Eastern Range that we had not seen here in decades. When I decided to press forward and get General Chilton's support [General Kevin P. Chilton, Commander, U.S. Air Force Space Command] for the Space X proposal, it became a major decision for the 45th Space Wing.

The second decision revolved around how we managed our budget. That challenge involved manpower and dollars. The manpower aspect was relatively easy – relatively small numbers were needed to bring us in line with General Moseley's [General T. Michael Moseley, USAF Chief of Staff] vision for PB 720 (?). In other words, General Moseley's vision of how to become a smaller, more streamlined force in order to recapitalize to meet Air Force objectives. We met that manpower 'bogey' with relatively little heartburn. Along with that, we had to descope our budget line. One of my most important decisions in Calendar Year 2006 was to choose what to cut out of the funding line. The most important thing was figuring out where to cut the funding so I didn't put the mission at increased risk. In 2006 we were able to descope about \$20 million. That's somewhere between five and ten percent of our total budget.

We have been handed equally large bogeys for 2007. In 2006 we went with a 'peanut butter spread' across our various groups. That will not work for 2007. So, we are having extensive resource management boards to descope our budget line. I think we are coming to realize that Cape Canaveral operations are all about real estate. The greater the infrastructure we have to maintain, the more bills we have to pay. So, we're becoming more disciplined about how we do things at Cape Canaveral. That may be the key to bringing down our financial obligations to manageable levels. If we take on a new program, what risk does it pose for our other customers and the Wing's mission in getting satellites to orbit? Answering that fundamental question takes a lot of discussion, a lot of data collection, and a lot of time. But it is incredibly important to the Wing's strategy. It touches every element of the Wing: the financial piece, the civil engineering piece, the launch group and the range operations piece. Everybody's touched by the decisions we make affecting programs.

The third thing is more a tactical decision, but I think it's noteworthy. During the Delta II STEREO launch (October 26, 2006), I decided to approve an on-console safety waiver. I don't know how often waivers of this kind happen – I suspect it isn't very often.

C: The last countdown safety waiver I recall hearing about occurred during Brigadier General Hinson's tour [as 45 SW Commander] back in 1995 or 1996.

H: After an appropriate dialog, I decided to waive a 127-1 requirement.

C: Was it a 'single source' decision?

H: It was a 'toxics' requirement waiver. Late in the count, one of our weather balloons indicated the winds had shifted, and the "worst case" toxic cloud projection extended farther down into the Port Canaveral area than we had predicted. In order to launch, I had to issue a waiver on console. I did that after my discussion with Mr. Pete Taddic as on-console safety advisor. We did more than challenge the requirement, we dug deeper into the situation to determine how many and what kinds of people would be affected in the worst case scenario. We got a better picture of who was involved, and it turned out to be Coast Guard personnel. They were all relatively young and healthy, so we had an effective argument for going ahead with the launch as planned. I thought that was historic.

C: It is rather unusual. But if you had Range Safety endorsing it, that was significant as well.

H: It was essential for me to have that independent assessment from Range Safety on console – or I wouldn't have approved it. So in my opinion those were my three most historically significant decisions in 2006: a major budget drawdown, a public safety waiver, and a new launch provider as Cape Canaveral.

C: Well, thank you, General. My next question revolves around personnel. Of course, we've been waiting for this for about two years – namely, Patrick's conversion from our traditional civil service system to the National Security Personnel System (NSPS). Now, not all our civil servants converted to NSPS last October, but perhaps you would like to comment on those who were converted to NSPS under Spiral 1.2 at that time (e.g., October 2006).

H: This is a story that is still unfolding. We haven't had our first 'mock' pay pool yet. It is certainly true that the implementation of NSPS will require a cultural change for the people affected by it. NSPS is a new process that is *not* intended to benefit everyone. It provides more authority and control over commanders and supervisors to ensure their employees are held accountable for their performance. I look at NSPS as a very positive thing. I have more control at the tactical level to place people and manage them to accomplish the right objectives. It also gives me more authority to hold people accountable for their performance.

Now, all of this takes a great deal of work. It requires more documentation, more discussion, and more mentoring to make NSPS work. It takes more time. You can't just put this thing in a template and expect it to be all that is required to get the most out of people and make the most of our human capital. NSPS will be much a more intensive workload than the old personnel system. Some people are walking into NSPS, and they are already 'topped out.' Others have the potential to get higher grades, and their opportunity to garner better pay is relatively large. So, it

depends on where an individual sits coming into the program. For those nearing retirement, there are some serious issues revolving around their being topped out.

The process to watch will be the pay pool manager exercise -- we have a mock pay pool exercise coming up later this month. So, I will reserve judgment on how well NSPS works until I see how that exercise turns out. It is all about providing people with incentives to perform well. Not everyone can be a "best performer." The pay pool will be an exercise to demonstrate that not all civil servants are created equal. The goal is to provide incentives and rewards for our best performers. It will also allow us to identify people who aren't performing as well as we would like.

C: A lot will depend on the performance data provided to the pay pool. Of course, there were some problems with MyBiz software late last year, but most of those bottlenecks have been corrected. MyBiz appears to be a viable software program, and we should be able to draw on electronic media to allow pay pools to do their job. One item I noted, however, was that Mr. Bob Fore, who has been instrumental in facilitating NSPS locally, is due to retire shortly.

Perhaps you would like to comment on the supervisor's role in NSPS generally or in particular the supervisor's need to provide adequate documented information on the employee's performance to let the pay pool panels operate successfully.

H: I know how the pay pool is supposed to work. I anticipate that it won't work exactly as expected. (Laughter) We aren't going to get it 100 percent right on the first try. Concerning Bob Fore, yes, he's recently announced his retirement. He's been the Technical Director of the 45th Space Wing for a long time. He was instrumental in setting up the NSPS process locally, and Patrick was recognized by Air Force Space Command as an outstanding performer in establishing NSPS. He and the entire NSPS team have done a great job in crafting what they think will be the best approach to the new system. In practice, we'll see how that bears fruit. But Bob will be retiring, and he is stepping back from his responsibilities as our first pay pool manager for the Wing Staff. Now we will have to select a successor. Bob also had direct report authority for NSPS, and we will have to find someone else to do that as well. We will have to 're-wire' the mock pay pool. Fortunately, Bob's announced retirement gives us enough time to do that. So before we go through the mock pay pool, we will have a successor in place. It is probably why Bob announced his retirement when he did.

I hope we'll come away with the recognition that NSPS is a better system. It will help the Wing perform up to its full potential. It will all hinge on how it is implemented. In theory, it's a better system; in practice, given human nature, its success remains to be seen. It will take supervisors more time to make NSPS effective. It will be interesting to watch the process as it unfolds. I think we'll have a better handle on it for the 2007 oral history.

C: All right, ma'am. One of the things that occurred in 2006 was a major 'sea change' in one of Patrick's oldest organizations. DDMS [the Manned Space Flight Support Office] was inactivated effective 1 April 2007, and you and I were there for the inactivation ceremony on April 3rd. DDMS had been here since 1959. Perhaps you would like to reaffirm that the DDMS tradition for manned space flight support will continue with HSFS [Human Space Flight Support].

H: I wasn't here when DDMS' inactivation was proposed initially, but I could certainly see that things had changed regarding human spaceflight beyond the 45th Space Wing. Those things dictated the change in DDMS. The whole construct of CoComs [Combatant Commands] had changed. General Shelton [Major General William L. Shelton, Commander, 14th Air Force] stood up as commander of Joint Forces Component Command for Space. That happened on 1 October 2006, and the way we interfaced with higher commanders was transformed.

I answer to 14th Air Force in the 'organize, train, and equip' function. A lot of what we do here is equipping space with satellites.

C: So, is that considered a logistics function instead of an operational function?

H: I would say it should be considered an 'acquisition' function. We are the end of a long acquisition trail to get satellites into space. They are not really operational until they are on-orbit and functioning. So, we are acquiring satellites to equip Air Force Space Command.

C: Does the Space and Missile Systems Center (SMC) lose some acquisition responsibility under this reorganization?

H: No. SMC remains the prime acquisition arm, but with the activation of the 45th Launch Group in December 2003, the end of the acquisition process is launching the payload. In the old days, the 6555th Aerospace Test Group had that role under Air Force Systems Command. Today we have a launch group in lieu of the 6555th. The launch group works for the Wing Commander. Launching payloads to orbit is part of my role as 45th Space Wing Commander. SMC provides a tasking letter whenever equipment comes to us for launch. It tells us what we need to do to ensure the mission ends successfully.

But I digress. The important thing to remember is: General Shelton wears two hats. One of them is his 14th Air Force hat, and I've just described how that chain of command works. His other hat is JFCC for Space. As such, he is the commander of a combatant command. That command works for STRATCOM (Strategic Command). It is interesting to note that the 45th Space Wing is not tasked to report directly to JFCC for Space. The two space wings (30th and 45th Space Wings) operate under 14th Air Force, but we do not answer directly to a combatant commander.

C: DDMS used to report to the USSTRACOM Commander.

H: They did. But the USSTRACOM Commander has delegated all space authority to the JFCC for Space. So JFCC for Space has taken on the role of managing all assets in the geographic area of space. STRATCOM still has jurisdiction over it, but it is managed by JFCC for Space. So if something happens in, going to, or coming from space, the JFCC for Space is responsible from the war fighting standpoint.

As of 1 October 2006, STRATCOM delegated DoD Space Shuttle support to General Shelton as JFCC for Space. So, it makes sense that the 45th Space Wing's piece of manned space flight support would come under General Shelton. We're better postured to draw on DoD resources to support Space Shuttle operations on a national level.

When the Columbia mishap occurred in February 2003, the roles and responsibilities of the agencies participating in the recovery were not as clearly understood as if the accident had

occurred shortly after lift-off from Florida. The command arrangement at that time needed some work.

C: Do you think the organizational changes you mentioned were a reaction to the Columbia disaster in 2003?

H: No, I don't think so. Those changes may have happened anyway, so I doubt the accident drove them. Nevertheless, a Shuttle accident could happen *anywhere* in the world today, and we are better postured to respond to it. Under the present arrangement, STRATCOM can task PACOM (Pacific Command) if something splashes down in the Pacific Ocean. With the new Constellation program coming on line in the near future, capsules may be landing in the Pacific routinely, just as they did during the Mercury, Gemini and Apollo programs in the 1960s and early 1970s. We aren't postured locally as well as PACOM is to handle those kinds of recovery operations.

C: Naturally DoD recovery operations would be more responsive, given the level of command originating the order.

H: Yes. Instead of DDMS managing it, it makes sense for it to originate at JFCC for Space. No matter where an incident occurs, the Air Force can go to the right CoCom and get a rapid and appropriate response. NASA should be happy about this development. We were not properly organized to deal with those types of contingencies, and now we are. The people we have here should begin to migrate to the JFCC Operations Center. We gave up four billets this year so General Shelton will have his own human space flight support team on console every time we have humans flying in space. Orbital debris incidents would also be handled by General Shelton's team. Collision avoidance scenarios and damage assessments would also be done at JFCC Space.

C: Does that presuppose that some of the people working in the Shuttle Operations Center (SOC) locally might move over to 14th Air Force?

H: The billets have, but whether or not the people go is another issue. I tasked [Lt. Colonel] Nick Scaward, who heads up Human Space Flight Support, to develop a support structure that is appropriate for what we need to do here in support of the larger mission, including the new Constellation. He did that last week.

C: With representatives from the other services also move to JFCC Space?

H: Well, that's one of the things that need to be decided. The Shuttle, which retires in 2010, is an airframe-centric space vehicle. The Shuttle won't be extended beyond 2010. They don't have the money to extend it.

C: Could you confirm that the Constellation is not expected to be operational before 2015?

H: There will be a gap between a NASA-owned Shuttle program and the Constellation program. NASA has set aside \$500 million and announced it has commissioned two commercial launch entities to develop new launch capabilities for International Space Station logistics missions. Space X is one of those entities, so the fact that Elon Musk and Space X are coming to Cape Canaveral is very encouraging. If Space X succeeds, the company is pre-postured to support NASA resupply missions.

The other alternative is buying Soyuz launches from the Russians. To be honest, they considered an EELV [Evolved Expendable Launch Vehicle] option, but even that would require seed money for a new development.

C: NASA couldn't sponsor resupply missions using the current stable of Atlas V or Delta IV vehicles?

H: Well, neither the Delta IV nor the Atlas V has a docking system. They would have to build it, and Michael Griffin [NASA Administrator] would have to divert money to invest in it.

C: But it would give us an additional launch system to resupply the Space Station.

H: Right. But what would NASA have to give up to develop such a capability?

C: Well, we're speculating on things that might be resolved years from now, but perhaps there are more pressing concerns we ought to address.

H: Though 2010 we will continue to support the Space Shuttle. We are looking at ways to alter the Eastern Range to provide more support with less infrastructure. GPS metric tracking is one of the things we need to pursue. The Space Shuttle is a legacy system, and it cannot readily adapt to range modifications. Our public safety responsibilities are based on long-standing policy, guidance, and public law. Those are difficult to change. So we'll have to put up with the Shuttle as it stands, but the new Constellation offers us the potential of doing business in a different way.

C: Might we anticipate some resistance from NASA to accommodate GPS metric tracking because it would cost more money?

H: I don't think it will cost NASA extra money. The agency will have to meet our public safety requirements. There is a new version of 127-1 in the works, and NASA will have to comply with it when it comes out. There are lots of ways we can help them meet the new requirements. GPS metric tracking makes a lot of sense for all our customers. With GPS metric tracking, a lot of old range infrastructure isn't needed, and it won't have to be maintained. That area alone should provide savings, and might even cut costs for NASA.

C: Does Elon Musk have any problem with GPS metric tracking requirements?

H: The requirement starts in 2011. His first launch from Cape Canaveral is slated for 2008. We haven't discussed the matter of GPS metric tracking with him yet – he doesn't have any launches on the manifest for 2011. Obviously as we get closer to 2011, the subject will come up. We need to engage with him in discussion early to see if he would *rather* operate with GPS metric tracking early.

C: It would certainly save him a costly transition later on.

H: That's right. We are working with another customer currently to get certified GPS metric tracking operations in the near future. I could go on and on about the launch business, but let's go on to other items I have on my list.

For example, ERNESTO was one of those things we dealt with in 2006. The hurricane season in 2004 and 2005 was much more stressful than Hurricane ERNESTO in 2006, but it does give me an excuse to mention that we are moving into a new operations center in Building 423, hopefully

before the end of 2007. The 45th Space Wing is the only wing in Air Force Space Command that has to deal with the repeated threat of hurricanes. Our new command post/operations center will allow us to deal with those threats and any other emergencies we encounter in a much more efficient manner. Hurricanes are the most likely contingencies we have to deal with. Just this morning I had a tour of the new operations center, and it looks like it will serve us well. The new center complements the Shark C2 [command and control] system, which really came into its own in 2006. Those two items put the Wing on a whole new level of command and control when it manages incidents and emergencies. 2006 will be remembered as a year when we made great strides in command and control.

We also won the Schriever Trophy at Guardian Challenge in 2006.

C: Yes, and the Wing received two Air Force Outstanding Unit Awards (AFOUAs) in 2006 [for exceptionally meritorious achievement and exceptionally meritorious service].

H: Yes. The list of awards was extensive. Guardian Challenge was not held at Vandenberg AFB [California] this year – it was held at Peterson AFB [Colorado]. This was the first time, at least in recent history, that Air Force Space Command held Guardian Challenge somewhere other than Vandenberg. It was a budget-saving measure. The security forces competition was done differently in 2006 than in earlier years. Our guys did a sterling job. We had multiple individual awards, and we took the Schriever Trophy overall.

I don't know if you keep a record of active-duty deaths, but in the Wing we had one active-duty death in 2006. It was accidental. The 21st of June was a really interesting day because we had the Wing Commander change of command, the incoming wing commander pinned on general officer's rank, we had a launch that day, and then we had notification of an active-duty death that day.

C: I'm glad you mentioned the active-duty death – I missed it. It apparently was eclipsed by those other events. Normally I would see something in the Missileer newspaper if someone died prematurely or under suspicious circumstances.

H: The individual didn't die on the 21st. The death occurred on June 5th, but the Wing was notified on the 21st.

C: Was it attributed to accident or misadventure here on Patrick?

H: No. It occurred downtown. It was an accidental death. The individual was missing, but his body was not found for a few weeks. We just received confirmation that the death was accidental. Because of the condition of the body, it took a long time to determine the cause of death.

You'd mentioned quality of life improvements in your topics list, so let me address that subject. 2006 was historic – the Wing leadership moved into their new houses (laughter).

C: Eighty-one certificates of occupancy were issued by October 2006 for Pelican Coast, so the project is coming along.

H: We have about 150 houses occupied presently, plus or minus five units. Phase 1 of our housing privatization is almost complete. 2006 was the year people really began moving into privatized housing at Patrick.

C: I noted that the contractor's people began clearing and grubbing for Phase 2A of the project in November 2006, but I understand that the completion date the entire project will probably shift about a year later than anticipated, to June 2008. Is that a fair estimate of the progress?

H: I think it's fair to say at this point that the end state of the project is up for negotiation. Phase 1 will be completed, but how Phase 2 will end up or whether or not Phase 3 will even proceed as planned – well, we are involved in negotiations right now to restructure the project. This week we're having discussions with General Weher on how to proceed. Frankly, the project didn't progress as well as people hoped.

C: We will have to react to changing circumstances.

H: That's right. But 2006 is significant in that people moved into new housing at Pelican Coast.

The other thing worth mentioning is that we are refocusing our area development plans for Cape Canaveral. It is a continuing effort with a lot of commander involvement. It relates to where we want to go with our present infrastructure long-term.

C: Well, the deactivations of old Atlas and Titan facilities on Complexes 36 and 40 in the past couple of years and recent plans for the Delta II program deactivation have a real impact on how the area development plan is managed.

H: That's right. I talked about real estate earlier, but let me emphasize that if nobody picks up the bills for the Delta II line, for example – guess what? 89 facilities will get shut down, and we will divest ourselves of some standing facilities. We will have to shut them down rather than maintain them. It's all about real estate.

C: Well, reimbursable programs are always a major concern. Once the Space Shuttle program shuts down in 2010, will we pick up a new major reimbursable program courtesy of Elon Musk, Space X, or possibly other sources?

H: One of the other players is Space Florida. The Florida Space Authority was dismantled in 2006. The Governor of Florida decided to take three separate state entities and put them under Space Florida. From our perspective, Space Florida is the replacement organization. It is the governor's organization to encourage economic development in the state of Florida in the space arena. Obviously, we get a large part of their attention because we manage the Space Coast's launch activities.

Space Florida is becoming an important part of our lives – more so for our lives than NASA's life. NASA only owns and operates Complexes 39A and 39B. We have all the rest of the launch pads. When Space Florida looks for launch sites, they come to us. Complex 46 is a dual-use pad for small commercial launch vehicles and the Navy's Trident II missile program. Space Florida is looking at new ways to bring commercial space flights to Complex 46, so we have that initiative going for us.

The other player is Kistler Aerospace's rocket plane effort. They have some NASA grant money to develop new launch capabilities – NASA's \$500 million effort I mentioned earlier in this discussion. Kistler is also considering launching vehicles from Cape Canaveral. Space X is already lined up to use the Cape, so Kistler may decide to come to Cape Canaveral as well. We are considering how to support Kistler, if they decide to come our way.

C: There is one other avenue for growth – Lockheed Martin and Boeing decided to 'bury the hatchet' – and not in each other – to form the United Launch Alliance in December 2006. Perhaps you would like to comment on this new relationship, now that the two principal launch contractors on the Cape have made peace.

H: You'd have to talk to Colonel Brady, the SMC SPO for Space Launch, to get all the contractual details, but the bottom line is that Lockheed Martin and Boeing combined forces to provide more effective launch support for government-sponsored space missions. The two principals do things differently, and they weren't able to talk to each other due to proprietary considerations. If we wanted to talk about the inner workings of an Atlas V issue, the Delta IV (Boeing) people had to leave the room; if we wanted to talk about a Delta IV, the Lockheed Martin (Atlas V) people had to leave the room. Now, with the advent of ULA, the proprietary barriers have gone away. They still do things differently, but they can talk to each other, so there should be some synergy there.

Somewhere down the road, one of the two launch vehicle assembly lines at the ULA plant in Decatur, Alabama, might have to shut down for business reasons. So a lot of change comes with the new arrangement, and we have to examine the consequences of the reorganization and whether or not it will have a significant impact on our risk analysis.

C: There is a distinct advantage in having two different major launch programs. If one line stands down due to a launch mishap, the other can continue launching unaffected.

H: That was our original strategy – to have two independent launch contractors to guarantee our assured access to space. So, that's our present situation at Cape Canaveral from the launch capabilities perspective. 2007 will be a big year for change, and 2008 may actually lead to the first launch of the Falcon 9 [Space X] vehicle from the Cape. It will be the first Falcon 9 launch from anywhere in the world. As we anticipate these new developments, we'll have to keep an eye on the Atlas V and Delta IV programs to ensure they remain healthy and well-supported.

C: Well, I know your time is limited, but I was hoping you would comment on the recent ORI and UCI [Operational Readiness Inspection and Unit Capability Inspection].

H: First of all, I am very proud of the Wing. The result of the UCI was "in compliance" *without comments*. That is the highest grade a unit can receive on a UCI. We did extremely well on Phase I and Phase II of the ORI considering the budget cuts and manpower reductions we experienced in the functional areas examined by the inspectors. We have also had increased deployments, and those absences have impacted our ability to prepare for things like major inspections.

C: Despite those handicaps, your people still displayed a lot of spirit and enthusiasm during the ORI.

H: I certainly saw it during the ORI – I have to admit I didn't see it beforehand, mainly because I wasn't here; I was at Capstone (laughter). But people did a fantastic job getting ready for those inspections. Colonel Adams, who is the AFSPACE Inspector General, tried to make inspections much more realistic. The inspectors' evaluation of our launch operations was very realistic. They inspected the Delta II/THEMIS mission, which was launched in February 2007.

They also inspected us on deployment operations and our incident response management. We 'watered their eyes' with our Shark C2 command and control system – they hadn't seen it before. The concept behind the Shark C2 started here. We did a lot here with a little money and a lot of local talent. We apparently cracked to code on how to handle knowledge management *inexpensively*. I got a call from Lt. General Peterson even before I left for Capstone in January 2007. He told me that, in his opinion, Patrick AFB is the example that he wants all other Air Force agencies to follow. We really hit a 'home run' with our knowledge management initiative. The Shark C2 is a really very effective system in getting out direction and guidance to people who need to react to incidents and emergencies. It also eliminates a lot of the 'fog of war' by facilitating the rapid sharing of pertinent information.

When we completed Phase II of the ORI, the team did a great job there as well.

C: Well, I don't have any other questions, but perhaps there is something else you would like to add before we close.

H: No, I think I added it along the way, Mark. I might add that I suspect we will see fewer opportunities to add quality of life projects in the near future. But, it's hard to say that will diminish our quality of life, particularly when we live here in Florida. We continue to reap the benefits of working in a place where many people come to vacation and/or retire. Certainly outside our gates there are a lot of healthy family activities to be enjoyed. We also have great services within the Wing to support our troops and their families. We may have to trim back on quality of life initiatives in an era of budget austerity, but those items are examined carefully.

So we will see how it goes. I think the developments to watch for next year are privatized housing, the continuation of the area development plans, and what types of Military Construction projects get funded. We continue to explore avenues to get a new Officers' Club – as you know, our old one burned down in 2005. The new club is also part of our new area development plan.

C: We will have to take a 'wait and see' attitude about the new club, because the money to build it may not be there.

H: That's exactly right. So, we are looking for creative ideas to acquire a new club by avenues other than MILCON. Enhanced Use Lease may be one avenue. Space X also requires a lot of creative thinking.

C: I think we are moving into a 'watershed' period in our history. We are simply going to have to be more creative and resourceful, given the increasing budget austerity in coming years. So it's an exciting time, if only because the challenges will be rather daunting.

H: And the hardest part is keeping everyone in the Wing in sync with the same goals. (Laughter) The people doing range architecture, the people doing documentation, the people providing resource management of boosters and the people working Range Safety – all those people have

to have the same view on how we accommodate our new range customers. On top of that, there has to be budget transparency. We have to ensure the customer doesn't get gouged for range services.

C: Quite frankly, if the customer feels he's getting gouged, he's likely to go to Sea Launch or ArianeSpace.

H: That will probably be a big change next year when we talk again. How do we meter ourselves? When you have a JON [Job Order Number] to charge to, it looks like a blank check – but it's not. How do we demonstrate that we are a cost-effective alternative to our foreign range competitors? That will be a big story to talk about in 2007.

C: Well, thank you very much for your time, ma'am.

H: Thank you, Mark.

(End)